

REMARKS

Applicant has amended claims 1-9. Applicant respectfully submits that these amendments to the claims are for the purposes of clarifying the language contained therein. Accordingly, Applicant respectfully submits that these amendments to the claims do not raise any new issues. Still further, Applicant respectfully submits that the amendments to the claims are supported by the application as originally filed and do not contain any new matter. In particular, Applicant respectfully submits that the amendments are supported by the description at page 15, lines 22-23 and what is shown in Figs. 6, 8, 10, 11 and 12. Therefore, the Final Office Action will be discussed in terms of the claims as amended.

The Examiner has rejected claims 3-7, and 9 under 35 USC 112, second paragraph. In view of the above amendments, Applicant respectfully submits that claims 3-7 and 9 comply with the requirements of 35 USC 112, second paragraph.

The Examiner has rejected claims 1-9 under 35 USC 103 as being obvious over Orcutt et al. in view of Nihei, stating that Orcutt et al. discloses all of Applicant's invention except for a second movable member rotationally provided on a supporting head, and a drive section, which drives said second movable member or that one end of the second movable member is shaft-supported by the bonding head, or that both actuators directly drive the tool or bonding head; Nihei discloses the use of multiple identical movable members with multiple drive members connected to bonding tools, wherein each actuator directly drives the bonding head with the second movable member and drive member providing additional positional flexibility to the bonding tool; and it would have been obvious to one of ordinary skill in the art to modify Orcutt et al. in view of Nihei to achieve greater control over the positional of the bonding tool.

In reply thereto, Applicant would like to first point out that it is a feature of Applicant's invention to provide a linear guide structure which is made up of a guide, guide groove, rotating hole and a rotating shaft loosely engaged with the rotating hole. With this linear guide structure an advantage is provided that a complicated mechanism that includes rotational bearings, etc. can be avoided. In addition, with the linear guide structure of Applicant's invention, swing motion is possible and the bonding head can be moved at a higher rate of speed with a simple structure.

With the above in mind, Applicant has carefully reviewed Orcutt et al. and respectfully submits that Orcutt et al. discloses a linear motor 14 and a theta angle motor 15 and while these two motors may correspond to the two actuators of Applicant's invention, with regards to movement in the XY directions, there is only one rotational center or a supporting point for these

two actuators. In contrast thereto, in Applicant's invention a rotational center is provided for each of the two actuators or in other words, there are two rotational centers in Applicant's invention instead of one, as is taught by Orcutt et al. Still further, Applicant respectfully submits that Orcutt et al. does not teach or disclose a linear guide structure such as Applicant's invention which is comprised of a rotational shaft, guide and guide groove.

Applicant has further carefully reviewed Nihei and respectfully submits that in Nihei at the distal ends of the arms AM 11 to AM 13, three actuators are provided which are wrist rotary drive axes. In contrast to the Examiner's suggestion, Applicant respectfully submits that there is absolutely no actuator provided on the acting side (bonding head side) of the movable arm. Still further, Applicant respectfully submits that Nihei discloses the use of bearing mechanisms BR12 and BR 13 and does not disclose a linear guide structure comprised of a rotating shaft, guide and guide groove, as is required by Applicant's invention.

In view of the above, therefore, Applicant respectfully submits that the combination of Orcutt et al. and Nihei cannot provide or suggest to one of ordinary skill in the art a linear guide structure as in Applicant's invention that is comprised of a rotating shaft, guide and the guide groove and the combination of Orcutt et al. and Nihei will not provide the advantage derived from such a linear guide structure of Applicant's invention in which the swing motion is possible and the bonding head is moved at high speed due to the simple structure of the linear guide structure.

In addition to the above, Applicant respectfully submits that Orcutt et al. describes that the theta rod 11 is attached to the theta motor coil 15a and theta pivot 13 by moving parts 12, 12a and 11a. Applicant respectfully submits that this theta rod 11 and the moving parts 12, 12a and 11a would correspond to the first movable arm of Applicant's invention and the theta motor with magnet 16b of Orcutt et al. would correspond to the second movable arm of Applicant's invention. However, Applicant respectfully submits that the portion of Orcutt et al. which would correspond to the movable arms of Applicant's invention is comprised of a plurality of elements including the theta rod 11 and moving parts 12, 12a and 11a. In other words, Applicant respectfully submits that Orcutt et al. teaches a structure which requires a plurality of parts and thus heavy in weight, high in momentum and responds with delays. In contrast thereto, in Applicant's invention and as described at the third paragraph of page 8 of Applicant's specification, since the moving arm is comprised of a single part so that the weight reduction in the guide mechanism such as the movable members and linear guides, etc. is obtained, a high

moving speed of the bonding head can be achieved. Still further, Applicant's review of Nihei indicates that the three actuators which are the wrist rotary drive axes are provided at the distal ends of the arms AM11 to AM 13 and therefore provide a heavy load mass which also would provide a slow moving structure.

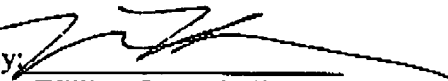
As should be apparent from the above, Applicant respectfully submits that the combination of Orcutt et al. and Nihei cannot accomplish high speed working actions which is the advantage of Applicant's invention. Therefore, Applicant respectfully submits that not only is the combination suggested by the Examiner not Applicant's invention, but also the combination suggested by the Examiner is would not be suggested to one of ordinary skill in the art and would not achieve the advantages of Applicant's invention. Therefore, Applicant respectfully submits that claims 1-9 are not obvious over Orcutt et al. in view of Nihei.

In view of the above, therefore, it is respectfully requested that this amendment be entered, favorably considered, and the case passed to issue.


Please charge any additional costs incurred by or in order to implement this amendment or required by any requests for extensions of time to KODA & ANDROLIA DEPOSIT ACCOUNT NO. 11-1445.

Respectfully submitted,

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